

**REMARKS**

Claims 1-49 are pending in the application. Claims 1-6, 17-32, 34, 37/34, 38, 41/38, 44, and 47-49 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Mitsuyama et al. (U.S. Patent No. 5,768,412) ("Mitsuyama") in view of Nishikawa (U.S. Patent No. 6,587,222) ("Nishikawa"). Claim 33 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Mitsuyama, Nishikawa, and further in view of Zhou (U.S. Patent No. 6,353,700) ("Zhou"). Claims 7-16, 35, 36, 37/35, 37/36, 39, 40, 41/39, 41/40, 42, 43, 45, and 46 are objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form.<sup>1</sup> Applicants submit the following arguments to traverse the prior art rejections.

Applicants' invention relates to a method for segmenting a color image. Applicants refer the Examiner to the detailed description of the invention and Mitsuyama in the July 14, 2003 Amendment.

**Rejection of Claims 1-6, 17-32, 34, 37/34, 38, 41/38, 44, and 47-49 Under § 103(a) Over Mitsuyama in View of Nishikawa**

Nishikawa relates to an image processing apparatus and method thereof and, more particularly, to an image processing apparatus and method for expanding coded image data and performing a process appropriate for the characteristics of an image, as well as a computer-readable memory.

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<sup>1</sup> In the Office Action, the Examiner does not state that claims 37/35, 37/36, 41/39, and 41/40 are objected to. Applicants believe that the Examiner, however, intended to object to these claims because he merely objected to claims 35, 36, 39, and 40.

Applicants respectfully submit that claim 1 is patentable because the combination of Mitsuyama and Nishikawa fails to teach, suggest, or provide motivation for all elements of the claim. For example, claim 1 recites a color image segmentation method comprising the steps of:

calculating a first value representing a degree of difference between a pixel and peripheral pixels from the color of peripheral pixels based on a plurality of pixel values of an input image,

in combination with other features of the claim. On the contrary, Mitsuyama teaches calculating the magnitude of change of density for a single-color image, i.e., one of the red-colored image, green-colored image, and the blue-colored image (col. 4, line 67- col. 5, line 13). In other words, it is not possible to calculate the claimed first value because in each of the single-color images, there would be no difference in the color between a pixel and peripheral pixels since all the pixels would be of one color. Furthermore, Mitsuyama teaches the calculation a quantity representing the magnitude of change of density, not color.

Furthermore, Applicants submit that the combination of references fail to teach, suggest, or provide motivation for:

obtaining a converted image by converting the first value into a value of a predetermined scale.

in combination with other elements of the claim. On the contrary, Nishikawa does not teach such a feature. In the section of Nishikawa cited by the Examiner, “[a] group of quantization data is inversely quantized (or inversely scaled) by an inverse quantization process 523.” (col. 7, lines 34-36). The inverse scaling, i.e., inverse quantization, is entirely different from the claimed step of obtaining a converted image, as claimed.

In an inverse quantization process, each of the components of a group of quantization data is inversely scaled according to the corresponding quantization scale in an quantization table. In other words, all the components of the group of quantized data are not inversely quantized at the same level because, initially, each of the frequency components are “quantized as appropriate by a quantization process 213 for each of the frequency components.” (col. 4, lines 49-51; see also, “quantization process 513,” col. 7, line 14). Specifically, higher frequency components are scaled at higher levels than lower frequency components for coding efficiency and less reconstruction error. This is entirely different from obtaining a converted image by converting the first value into a value of a predetermined scale.

Assuming arguendo, that Nishikawa teaches what is claimed, the same quantization scale would then be applied to all the components of the group of quantization data in Nishikawa. This is entirely contrary to what is taught by Nishikawa, if not the generally known principles of data compression.

Additionally, the combination of Mitsuyama with Nishikawa does not render the claim prima facie obvious because such a combination would change the principle of operation of Mitsuyama. M.P.E.P. § 2143.01. Nowhere in Mitsuyama is there any teaching, suggestion, or motivation for quantization to complement the inverse quantization taught by Nishikawa. While Nishikawa discloses inverse scaling, the reference refers to inverse quantization of quantization data based on frequency components. Nowhere in Mitsuyama is there any suggestion or motivation for the quantization of frequency data. Without the prior quantization of frequency

components, the inverse quantization taught by Nishikawa as applied to Mitsuyama would result in meaningless values.

For at least these reasons, claim 1 is patentable.

Claims 2-6, 17-31, 42, and 44-49, which depend from claim 1, are patentable for the reasons submitted for claim 1.

Similarly, claims 32-34, 37/34, 38, 41/38 are patentable for the reasons submitted for claim 1.

Claim 3 is patentable because the Mitsuyama fails to teach, suggest, or provide motivation for quantizing pixel values of the input image into a predetermined number of representative pixels values. The section of the reference cited by the Examiner makes no mention of quantization as claimed.

In addition, claim 4 is patentable because Mitsuyama fails to teach, suggest, or provide motivation for representative pixel values consisting of 10-20 values. Figure 8A-8C referenced to by the Examiner do not suggest or provide motivation for any representative quantized pixel values, wherein the representative pixel values consist of 10-20 values. In contrast, the figures suggest pixels having a range of values from 120-200 in density.

Rejection of Claim 33 Under § 103(a) as Being Unpatentable Over Mitsuyama, Nishikawa, and Further in View of Zhou

Applicants submit that claim 33 is patentable because the combination of Mitsuyama, Nishikawa, and Zhou fails to teach, suggest, or provide motivation for the deficiencies of claim 1 as discussed above.

Amendment Under 37 C.F.R. § 1.111  
U.S. Appln. No. 09/556,328

Attorney Docket No.: Q54152

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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\*Granted limited recognition under  
37 C.F.R. § 10.9(b), as shown in a copy of  
the same filed on January 8, 2004, at the  
U.S.P.T.O.

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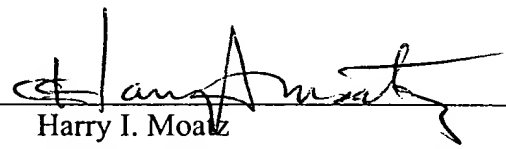
**BEFORE THE OFFICE OF ENROLLMENT AND DISCIPLINE  
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Seok-Won Lee is hereby given limited recognition under 37 CFR § 10.9(b) as an employee of the Sughrue Mion, PLLC law firm to prepare and prosecute patent applications wherein the patent applicant is the client of the Sughrue Mion, PLLC law firm, and the attorney or agent of record in the applications is a registered practitioner who is a member of the Sughrue Mion, PLLC law firm. This limited recognition shall expire on the date appearing below, or when whichever of the following events first occurs prior to the date appearing below: (i) Seok-Won Lee ceases to lawfully reside in the United States, (ii) Seok-Won Lee's employment with the Sughrue Mion, PLLC law firm ceases or is terminated, or (iii) Seok-Won Lee ceases to remain or reside in the United States on an H1B visa.

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**Expires: December 22, 2004**

  
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Director of Enrollment and Discipline

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